



LCPS Mathematics Course Selection Information SY 2025-2026

This document contains detailed information about the Loudoun County Public Schools (LCPS) mathematics pathways, course options for rising 6th, 7th, 8th, 9th, 10th, 11th, and 12th grade students.

Starting this year, LCPS will be utilizing SchoolLinks Course Planner. Students will use Course Planner to select courses for the next school year. This document shows the mathematics courses that are available to students based on their grade level, prerequisites, and student interests.

Use the links below to find specific information for the grade level and/or course students are currently enrolled. **Supporting documents are on page 2 (linked [here](#)).**

Elementary School Students		
Current 5th Grade Students (rising 6th graders)		
Middle School Students		
Current 6th Graders (rising 7th graders) • Enrolled in Math 6 • Enrolled in Math 7 • Enrolled in Pre-Algebra (Math 8) • Enrolled in Algebra 1	Current 7th Graders (rising 8th graders) • Enrolled in Math 7 • Enrolled in Pre-Algebra (Math 8) • Enrolled in Algebra 1	Current 8th Graders (rising 9th graders) • Enrolled in Pre-Algebra (Math 8) • Enrolled in a High School Credit Course
High School Students		
Current 9th, 10th, and 11th Grade Students (rising 10th, 11th, and 12th graders)		
LCPS IB Program Schools • Heritage High School Mathematics Information • Loudoun Valley High School Mathematics Information		

Document in Languages - coming soon

- [Arabic - عربي](#)
- [Farsi - فارسی](#)
- [Spanish - Español](#)
- [Vietnamese - Tiếng Việt](#)



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Other documents referenced within this document:

Materials for students and families
• Middle School Math Course Information Video for Parents/Guardians Video • Additional Information for High School Courses Beyond Algebra 2 Video • LCPS Mathematics Curriculum website
Materials for LCPS Staff (must use LCPS account to access)
• Middle School Math Course Selection Teacher Recommendation Process • Pre-Algebra Readiness Assessment Guidance Document • Pre-Algebra Readiness Assessment Parent Communication Sample (template available in Permission Click, directions to access the template are included in the sample) • Pre-Algebra Readiness Assessment Proctor Instructions • Guidance for Pre-Algebra Readiness Assessment After February 15th • Guidance for Single Subject Acceleration (Algebra in 6th Grade) • Guidance for Elementary/Middle Schools for Math Course Request Changes for Acceleration



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Math Course Selection Decision Process for Students Currently Enrolled in 5th grade

The math course options for rising 6th grade students are Math 6 or Math 7. Students should consider their level of understanding of mathematics concepts in their current math course as well as in math courses they may be skipping. For more information about the concepts included in each course, please visit the [LCPS Mathematics Curriculum website](#).

This decision should be made based on the student's long-term and short-term goals and aspirations.

Some factors to consider are:

- Does the student want to skip Math 6 and accelerate one year?
- Does the student want to take Algebra 1 in middle school in order to be able to apply to AET/AOS, Thomas Jefferson HS, or other magnet school?

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Math 6	Math 7	Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2	Probability & Stats Discrete Math Data Science Precalculus Math Analysis AP Statistics AP Precalculus
					Algebra 2/Trig	
Math 7	Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2	Probability & Stats Discrete Math Data Science Precalculus Math Analysis AP Statistics AP Precalculus	Probability & Stats Discrete Math Data Science Precalculus Math Analysis AP Statistics AP Precalculus AP Calculus AB AP Calculus BC
				Algebra 2/Trig		

This is a sample of a possible progression a student might take during their time in LCPS.



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Additional Acceleration in Mathematics

Some students may be interested in accelerating two years in mathematics, skipping Math 6 and Math 7, in order to access Geometry in 8th grade and Multivariable Calculus in 12th grade. Pre-Algebra recommendations are based on Pre-Algebra Readiness Assessment, MAP, and SOL data. Students who are interested in this pathway will opt in to take the Pre-Algebra Readiness Assessment. The window for this assessment is **January 15 - February 7**.

The image below shows the mathematics pathway to reach Multivariable Calculus in 12th Grade.

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2/Trig	AP Precalculus	AP Calculus BC	Multivariable Calculus

Further Acceleration in Mathematics through the Gifted Office

Algebra 1 in 6th grade is not recommended as the typical course progression in LCPS. However, LCPS acknowledges that single subject acceleration is a need for certain students. Students who may be successful in Algebra 1 in 6th grade will be referred to the Gifted Office based on Pre-Algebra Readiness Assessment, MAP, SOL, and other standardized assessment data. The Gifted Office will conduct an acceleration evaluation and further testing to determine eligibility.

The image below shows the mathematics pathway to reach Multivariable Calculus in 11th Grade. There is no calculus based option beyond Multivariable Calculus. Students on this pathway can choose to take a different advanced math course, such as AP Statistics or Data Science.

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Algebra 1	Geometry	Algebra 2/Trig	AP Precalculus	AP Calculus BC	Multivariable Calculus	

The goal of the math placement process is to ensure that students have access to the appropriate course to meet their individual academic needs based on their achievement as well as future goals. LCPS acknowledges that acceleration is a need for certain students. In the event that a family would like to discuss acceleration beyond the available course options in the LCPS Program of Studies, they can reach out to their school (teacher and/or counselor) and consult with the Office of Gifted Programs.



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Math Course Selection Decision Process for Students Currently Enrolled in Math 6

The math course options for rising 7th grade students currently enrolled in Math 6 are **Math 7** or **Pre-Algebra** (Math 8). Students should consider their level of understanding of mathematics concepts in their current math course as well as in math courses they may be skipping. For more information about the concepts included in each course, please visit the [LCPS Mathematics Curriculum website](#).

This decision should be made based on the student's long-term and short-term goals and aspirations.

Some factors to consider are:

- Does the student want to accelerate one year by skipping Math 7?
- Does the student want to take Algebra 1 in middle school in order to be able to apply to AET/AOS, Thomas Jefferson HS, or other magnet school?
- Does the student want to take Calculus in high school?

The image below shows typical mathematics pathways for current 6th grade students in Math 6. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 7th grade.

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Math 6	Math 7	Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Precalculus AP Statistics
					Algebra 2/Trig	
	Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Precalculus AP Statistics	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Precalculus AP Statistics AP Calculus AB or BC
				Algebra 2/Trig		



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Math Course Selection Decision Process for 6th Grade Students Currently Enrolled in Math 7

The math course options for rising 7th grade students currently enrolled in Math 7 are **Pre-Algebra** (Math 8) or **Algebra 1**. Students should consider their level of understanding of mathematics concepts in their current math course as well as in math courses they may be skipping. For more information about the concepts included in each course, please visit the [LCPS Mathematics Curriculum website](#).

This decision should be made based on the student's long-term and short-term goals and aspirations.

Some factors to consider are:

- Does the student want to skip an additional year of math, Math 8 Pre-Algebra?
- Does the student want to take two high school courses (Algebra 1 and Geometry) in middle school?
- Does the student want to take Multivariable Calculus in high school?

The image below shows typical mathematics pathways for current 6th grade students in Math 7. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 7th grade.

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Math 7	Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Precalculus AP Statistics	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Precalculus AP Statistics AP Calculus AB or BC
				Algebra 2/Trig		
	Algebra 1	Geometry	Algebra 2	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC Multivariable Calculus
			Algebra 2/Trig			



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Math Course Selection Decision Process for 7th Grade Students Currently Enrolled in Math 7

The math course options for rising 8th grade students currently enrolled in Math 7 are **Pre-Algebra** (Math 8) or **Algebra 1**. Students should consider their level of understanding of mathematics concepts in their current math course as well as in math courses they may be skipping. For more information about the concepts included in each course, please visit the [LCPS Mathematics Curriculum website](#). This math course selection will determine which mathematics pathways a student has access to in high school and affect their opportunities to apply to some magnet schools.

This decision should be made based on the student's long-term and short-term goals and aspirations.

Some factors to consider are:

- Does the student want to accelerate one year by skipping Pre-Algebra?
- Does the student want to take Algebra 1 in middle school in order to be able to apply to AET/AOS, Thomas Jefferson HS, or other magnet school?

The image below shows typical mathematics pathways for current 7th grade students in Math 7. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 8th grade.

Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Math 7	Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2 or Algebra 2/Trig	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus
	Algebra 1	Geometry	Algebra2 or Algebra 2/Trig	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC



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Math Course Selection for 6th and 7th grade Students in Pre-Algebra

The math course for rising 7th and 8th grade students currently enrolled in Pre-Algebra (Math 8) is **Algebra 1**.

The image below shows typical mathematics pathways for current 6th grade students in Pre-Algebra. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 7th grade.

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2 or Algebra 2/Trig	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Precalculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC Multivariable Calculus

The image below shows typical mathematics pathways for current 7th grade students in Pre-Algebra. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 8th grade.

Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Pre-Algebra (Math 8)	Algebra 1	Geometry	Algebra 2 or Algebra 2/Trig	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Precalculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC



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Math Course Selection for 6th and 7th grade Students in Algebra 1

The math course for rising 7th and 8th grade students currently enrolled in Algebra 1 is **Geometry**.

The image below shows typical mathematics pathways for current 6th grade students in Algebra 1. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 7th grade.

Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Algebra 1	Geometry	Algebra 2/Trig	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC Multivariable Calculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC Multivariable Calculus

The image below shows typical mathematics pathways for current 7th grade students in Algebra 1. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 8th grade.

Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Algebra 1	Geometry	Algebra 2/Trig	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC Multivariable Calculus



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Math Course Selection for 7th grade Students in Geometry

The math course for rising 8th grade students currently enrolled in Geometry is **Algebra 2 with Trigonometry**.

The image below shows typical mathematics pathways for current 7th grade students in Geometry. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 8th grade.

Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Geometry	Algebra 2/Trig	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC Multivariable Calculus	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus AP Calculus AB or BC Multivariable Calculus



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Math Course Selection Decision Process for 8th Grade Students in Pre-Algebra

The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in high school.

The math course for rising 9th grade students currently enrolled in Pre-Algebra (Math 8) is **Algebra 1**. Algebra 1 can be taken as a single block year long course (540000 - 1 HS Math Credit) or as a double block year long course (543201 - 1 HS Math Credit and 543202 - 1 HS Elective Credit).

The image below shows typical mathematics pathways for current 8th grade students in Pre-Algebra. The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in 9th grade.

Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Pre-Algebra (Math 8 SOL)	Algebra 1	Geometry	Algebra 2	Data Science Probability & Statistics Discrete Math Trig & Adv Algebra AP Statistics AP Precalculus
	Algebra 1 Double Block*		or Algebra 2/Trig	

** This math course selection will affect student schedules as it impacts the number electives available. Algebra 1 Double Block is an appropriate recommendation for students who wish to have additional class time and support in their Algebra 1 course.*



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Math Course Selections for 8th Graders in High School Math Courses

The 25-26 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in high school.

Questions to Guide Student Conferences

- What math courses are you interested in taking?
- What type of diploma do you want to obtain, Standard or Advanced?
- Will you be applying for a program at the Academies of Loudoun for AET or MATA in high school?
- What are your post high school interests?
 - What colleges/universities are you interested in applying for?
 - What careers are you looking to be in after high school and/or college?

Students enrolled in Algebra 1

Students currently enrolled in Algebra 1 can select from the following mathematics courses for their 9th grade year:

- Geometry*
- Algebra 2
- Functions, Algebra, and Data Analysis (FADA)

**Geometry is required for many courses beyond Algebra 2. Please see the Program of Studies and/or the [Sample High School Pathways](#) for more information.*

Students enrolled in Geometry

Students currently enrolled in Geometry can select from the following mathematics courses for their 9th grade year:

- Algebra 2
- Algebra 2 with Trigonometry
- Functions, Algebra, and Data Analysis (FADA)

Students enrolled in Algebra 2 with Trigonometry

Students currently enrolled in Algebra 2 with Trigonometry can select from the following mathematics courses for their 9th grade year:

- Trigonometry/Advanced Algebra
- Precalculus
- AP or DE Precalculus
- Math Analysis
- Probability & Statistics/Discrete Mathematics
- Data Science
- Computer Math H H
- AP Statistics



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Math Course Selections for 9th, 10th and 11th Grade Students

The 24-25 LCPS Program of Studies (coming soon) gives a full description of the mathematics courses offered in high school.

Questions to Guide Student Conferences

- What math courses are you interested in taking?
- What type of diploma do you want to obtain, Standard or Advanced?
- Will you be applying for a program at the Academies of Loudoun for AET or MATA in high school?
- What are your post high school interests?
 - What colleges/universities are you interested in applying for?
 - What careers are you looking to be in after high school and/or college?

Students enrolled in Algebra 1

Students currently enrolled in Algebra 1 can select from the following mathematics courses:

- Geometry
- Algebra 2
- Functions, Algebra, and Data Analysis (FADA)

Students enrolled in Functions, Algebra, and Data Analysis (FADA)

Students currently enrolled in FADA can select from the following mathematics courses:

- Geometry
- Algebra 2
- Algebra 2 with Trigonometry*

** Students must have completed Geometry in order to take Algebra 2 with Trigonometry*

Students enrolled in Geometry

Students currently enrolled in Geometry can select from the following mathematics courses:

- Algebra 2
- Algebra 2 with Trigonometry
- Functions, Algebra, and Data Analysis (FADA)

Students enrolled in Algebra 2

Students currently enrolled in Algebra 2 can select from the following mathematics courses:

- Trigonometry/Advanced Algebra*
- Precalculus*
- AP or DE Precalculus*
- Probability & Statistics/Discrete Mathematics
- Data Science
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics

** These courses require students to have completed Geometry and Algebra 2*



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Students enrolled in Algebra 2 with Trigonometry

Students currently enrolled in Algebra 2 with Trigonometry can select from the following mathematics courses:

- Trigonometry/Advanced Algebra
- Precalculus
- AP or DE Precalculus
- Math Analysis
- Probability & Statistics/Discrete Mathematics
- Data Science
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics

Students enrolled in Probability & Statistics/Discrete Mathematics

Students currently enrolled in Probability & Statistics/Discrete Mathematics can select from the following mathematics courses:

- Data Science
- Trigonometry/Advanced Algebra*
- Precalculus*
- AP or DE Precalculus*
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics

** These courses require students to have completed Geometry and Algebra 2*

Students enrolled in Trigonometry/Advanced Algebra

Students currently enrolled in Trigonometry/Advanced Algebra can select from the following mathematics courses:

- Precalculus
- AP or DE Precalculus
- Math Analysis
- Probability & Statistics/Discrete Mathematics
- Data Science
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics

Students enrolled in Precalculus

Students currently enrolled in Precalculus can select from the following mathematics courses:

- AP or DE Precalculus
- Math Analysis



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- Probability & Statistics/Discrete Mathematics
- Data Science
- Computer Math H
- AP Computer Science A (must have completed Computer Math H)
- AP Statistics
- AP Calculus AB

Students enrolled in AP Precalculus or Math Analysis

Students currently enrolled in Math Analysis can select from the following mathematics courses:

- Probability & Statistics/Discrete Mathematics
- Data Science
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics
- AP Calculus AB
- AP Calculus BC

Students enrolled in Data Science

Students currently enrolled in Probability & Statistics/Discrete Mathematics can select from the following mathematics courses:

- Probability & Statistics/Discrete
- Trigonometry/Advanced Algebra*
- Precalculus*
- AP or DE Precalculus*
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics

** These courses require students to have completed Geometry and Algebra 2*

Students enrolled in AP Statistics

Students currently enrolled in AP Statistics can select from the following mathematics courses:

- Probability & Statistics/Discrete Mathematics
- Trigonometry/Advanced Algebra*
- Data Science
- Precalculus*
- AP or DE Precalculus*
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Calculus AB**

** These courses requires students to have completed Geometry and Algebra 2*

*** This course requires students to have completed Precalculus*

Students enrolled in AP Calculus AB

Students currently enrolled in AP Calculus AB can select from the following mathematics courses:

- Probability & Statistics/Discrete Mathematics
- Data Science



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- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics
- AP Calculus BC

Students enrolled in AP Calculus BC

Students currently enrolled in AP Calculus BC can select from the following mathematics courses:

- Probability & Statistics/Discrete Mathematics
- Data Science
- Computer Math H
- AP Computer Science A (must have completed Computer Math)
- AP Statistics
- Multivariable Calculus